

From: Hyland, Patrick T. [pat.hyland@ou.edu]
Sent: 1/16/2018 8:41:37 PM
To: Troche, Luis [Troche.Luis@epa.gov]
CC: Taylor Mauldin [taylor@visitnorman.com]
Subject: Re: Follow up to USEPA visit to the National Weather Center

Hi Luis,

Here is a more detailed program:

- Arrival, welcome, and introduction to the NWC and University Research Campus (5-10 min., whole delegation)
- NWC tour/browse NWC tenant booths (30 min., split delegation)
- NWC tour/browse NWC tenant booths (30 min., split delegation)
- Departure from NWC to OU Innovation Hub-Fabrication Lab

National Weather Center Tour:

The National Weather Center (<http://www.ou.edu/nwc/>) is a one-of-a-kind facility that houses a unique confederation of The University of Oklahoma, National Oceanic and Atmospheric Administration (NOAA), and state organizations that work together in partnership to improve understanding of events occurring in Earth's atmosphere over a wide range of time and space scales. Tours will visit the Observation Deck to discuss the history of the National Weather Center and the development and growth of University Research Campus, as well as the forecast operations areas for the NOAA National Weather Service Oklahoma City/Norman Weather Forecast Office and the NOAA NWS Storm Prediction Center to discuss operational meteorology. VIP tours can be made available during the allotted time for delegation guests.

National Weather Center Organizations:

Federal:

NOAA National Severe Storms Laboratory (NSSL), NOAA National Weather Service Oklahoma City/Norman Weather Forecast Office (NWS Norman), NOAA Radar Operations Center (ROC), NOAA NWS Storm Prediction Center (SPC), NOAA Warning Decision Training Division (WDTD)

Academic:

OU College of Atmospheric & Geographic Sciences (A&GS) (OU School of Meteorology (SoM) and Department of Geography and Environmental Sustainability (DGES))

R&D Partners:

Advanced Radar Research Center (ARRC), Center for Analysis & Prediction of Storms (CAPS), Center for Spatial Analysis (CSA), Cooperative Institute for Mesoscale Meteorological Studies (CIMMS), Oklahoma Climatological Survey (OCS)/Oklahoma Mesonet, South Central Climate Science Center

Potential Booths/Organizations:

Oklahoma Mesonet (<http://mesonet.org/>): Most sophisticated surface observation network (120 stations) in the United States, covering all 77 Oklahoma counties. The Oklahoma Mesonet has profound impacts for forecasting as well as for agriculture.

ARRC (<https://arrc.ou.edu/>) **and NSSL** (<https://www.nssl.noaa.gov/>): We are a national leader in radar research and severe storm research. Experts in the area of radar meteorology can discuss the latest advancements in weather-radar technology, collaboration with the US, Mexico, and Canada,

and the use of weather radar not only to look at weather, but to monitor birds, bats, insects, and migration patterns (aeroecology).

CIMMS (<http://cimms.ou.edu/>) and **NSSL**: Researchers at the National Weather Center are working on developing new advances in forecasting and warning processes. FACETs (Forecasting a Continuum of Environmental Threats) is a new program that is utilizing Probabilistic Hazard Information (PHI) to disseminate warnings in an entirely new fashion. NSSL HyDROS is a hydrometeorology group working on developing a new flash-flood model for better prediction of dangerous floods (FLASH model). Researchers from these groups can discuss their work in the NOAA Hazardous Weather Testbed (HWT).

WDTD (<http://training.weather.gov/wdtd/>): This group trains all the National Weather Service forecasters in the United States, but has also provided training simulations for forecasters in Canada and Mexico

South Central Climate Science Center (<http://southcentralclimate.org/>): Established in 2012, the South Central Climate Science Center provides decision makers with the science, tools, and information they need to address the impacts of climate variability and change on their areas of responsibility. They promote multi-institutional and stakeholder-driven approaches to assessing the impact of climate extremes on natural and cultural resources.

Center for Autonomous Sensing and Sampling (<https://cass.ou.edu/>): CASS's mission is to explore, advance, and develop complete adaptive and autonomous sensing and sampling systems for use in the atmosphere, on the ground, and in the water, and to help facilitate the integration of this technology across various disciplines and institutions. The goal of CASS is to establish itself as a recognized global leader in research, education, and development involving autonomous sensing and sampling solutions to address science and technology driven needs, fostering an environment for trans-disciplinary applications of this technology, and helping to promote the effective transfer of knowledge and technology to academia, government, and industry.

The University of Oklahoma Office of the Vice President for Research (<https://vpr-norman.ou.edu/>): The University of Oklahoma's Research Campus is a collaborative environment where academia, industry, and government build on the university's intellectual vitality. Collectively, the federal and private entities housed on the Research Campus represent more than 750 technology and knowledge-based jobs for the Norman community and the state of Oklahoma. Exciting new developments are in place, led by the OU VPR office, to grow the Norman Weather Enterprise with dramatic impacts on the Oklahoma economy. UAV/UAS research via CASS and the initiative to create the National Environmental Simulation and Testing Facility (<http://nest.ou.edu/>) are at the top of the list growing the Norman Weather Enterprise.

Through the NWC tours and the opportunity to showcase the various tenants of the National Weather Center, we hope to address the following topics of interest:

- Weather impacts to crops, pollinators, agriculture, aquaculture/fisheries and economy
 - Habitats and Migration
 - Monarch butterflies and pollinators
- Weather impacts to transport of trade or stocking of supply chains
 - Reducing emissions with ocean vessels for trade
 - Air quality impacts
 - Food loss and waste on entire chain (production and consumption)
- Weather prediction and tracking capabilities and the ability to protect or harden infrastructure to maintain environmental protection, productivity, outputs or sustainability of coastal cities
 - Extreme heat impacts on health (working with National Institute of Health)
- Other ideas as we see fit relating work at the National Weather Center and the OU University Research Campus (including the Radar Innovations Laboratory) to this overall theme.

As you can see, there is a tremendous amount to cover in just a short period of time, but we are hoping that this program will allow us with the opportunity to showcase as much as we can about the

uniqueness of our facility, our research, and our various partnerships. Additional booths/research topics may also be possible, but this is a fairly comprehensive list of some of our current capabilities relative to your topics of interest.

If you require any additional information, please let me know.

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From: Troche, Luis <Troche.Luis@epa.gov>
Sent: Tuesday, January 16, 2018 11:50 AM
To: Hyland, Patrick T.
Cc: Taylor Mauldin
Subject: Re: Follow up to USEPA visit to the National Weather Center

Hi Patrick,

Thanks for the concept. We will need to detail it a bit more so i can present it to the Leaders and the Administrator. Would it be possible to add the name of the organizations and projects/topics that would be presented in the tour/booths? I need to be able to explain that and link it to our work. I also want to see if Canada and Mexico have similar efforts.

Also, is there a chance for a VIP behind the scenes tours for the Ministers while the delegations do the proposed tours? What would they see/learn?

Happy to chat today or tomorrow if you are available but wanted to get back to you quickly as i need to deliver a draft this Thursday.

Thanks!

Luis Troche
Senior Advisor for North American Affairs
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Sent from my iPhone

On Jan 16, 2018, at 12:09 PM, Hyland, Patrick T. <pat.hyland@ou.edu> wrote:

Hi Luis,

Our office just returned from a conference in Austin, so I wanted to follow up with you regarding an outline for the delegation visit in June.

Given our time constraints, I would like to propose what we had discussed previously, with a combination of short NWC building tours along with NWC tenants available in the Atrium to display and discuss their current, cutting-edge research.

Here is a proposed outline:

- Arrival, welcome, and introduction to the NWC and University Research Campus (5-10 min., whole delegation)
- NWC tour/browse NWC tenant booths (30 min., split delegation)
- NWC tour/browse NWC tenant booths (30 min., split delegation)
- Departure from NWC to OU Innovation Hub-Fabrication Lab

Let me know your thoughts regarding this proposed arrangement. I think this would be the best way to showcase the facility in addition to the organizations/tenants of the facility. We can also make sure to have literature and contact information available for any follow-up after the delegation visit.

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<Outlook-1503929675.jpg>

From: Hyland, Patrick T.
Sent: Wednesday, January 3, 2018 2:47 PM
To: Troche, Luis
Cc: Taylor Mauldin
Subject: Re: Follow up to USEPA visit to the National Weather Center

Hi Luis,

There would not be much of a difference between a one-hour program and a 1.5-hour program, but I will continue to look at other options including our short tours and tenant exhibitor displays for the delegation visit.

Patrick Hyland, CTA

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From: "Troche, Luis" <Troche.Luis@epa.gov>
Date: Wed, 3 Jan 2018 19:48:52 +0000
To: Pat Hyland <pat.hyland@ou.edu>
Cc: Taylor Mauldin <taylor@visitnorman.com>
Subject: RE: Follow up to USEPA visit to the National Weather Center

Hi Patrick—I appreciate it. Since we are still considering options, I would prefer to not limit our choices for the visit just yet. Would it be possible for you to give us the outline for both Options?

- The 1 hr short program
- And say a 1.5 HR longer program?

If it is not too much trouble, it would give us additional information in case our schedule allows for more.

Best regards,

Luis Troche

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From: Hyland, Patrick T. [<mailto:pat.hyland@ou.edu>]
Sent: Wednesday, January 03, 2018 2:37 PM
To: Troche, Luis <Troche.Luis@epa.gov>
Cc: Taylor Mauldin <taylor@visitnorman.com>
Subject: Re: Follow up to USEPA visit to the National Weather Center

Hi Luis,

Happy New Year to you too!

We are still in the process of putting together a program for the delegation. We are attempting to see what is possible within the one-hour timeframe that we have been allotted. At this point, I think having representatives from each organization with tables showcasing their research that highlights the main areas of focus that you mentioned along with our own areas of expertise while also offering short tours of the facility will be the best route going forward. We are going to be testing this setup at our annual American Meteorological Society meeting in Austin, TX next week, so it should give us a good idea of what can be possible for the delegation visit in June. If we had additional time other than just the hour with the delegation, we could probably put together a more detailed and expansive program, but that might not be possible given the schedule for the delegation visit.

If you have any additional questions, please let me know!

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From: "Troche, Luis" <Troche.Luis@epa.gov>
Date: Tue, 2 Jan 2018 12:38:23 -0600
To: Pat Hyland <pat.hyland@ou.edu>
Cc: Taylor Mauldin <taylor@visitnorman.com>
Subject: RE: Follow up to USEPA visit to the National Weather Center

Hi Patrick,

Happy New Year. I hope you are doing great. I am back in the office and wanted to follow up on our call from December. I'm wondering if you have made progress in outlining an event at the WC along the lines that we discussed. I'd be happy to chat on the phone so we can flesh it out. If you sent me a concept already, I may have missed it and would appreciate it if you can resend it.

Look forward to catching up with you as I need to flesh out this event for a briefing for the Administrator's team.

Best regards,

Luis Troche

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From: Hyland, Patrick T. [<mailto:pat.hyland@ou.edu>]
Sent: Wednesday, December 06, 2017 9:35 AM
To: Troche, Luis <Troche.Luis@epa.gov>
Cc: Sallee, Lee A. <lasallee@ou.edu>; Moore, Berrien III <berrien@ou.edu>; Roop, Kari D. <kroop@ou.edu>; Pirtle, Keli P. <keli.pirtle@noaa.gov>; Emily Summars <emily.summars@noaa.gov>; Kloesel, Kevin A. <longhorn@ou.edu>; Fiebrich, Chris A. <chris@mesonet.org>; Snow, John T. <jsnow@ou.edu>; Palmer, Robert D. <rpalmer@ou.edu>; Droegemeier, Kelvin K. <kkd@ou.edu>; Hong, Nadtya <Hong.Nadtya@epa.gov>; Mc Pherson, Renee A. <renee@ou.edu>; Kuster, Emma L. <emmakuster@ou.edu>
Subject: Re: Follow up to USEPA visit to the National Weather Center

Thank you, Luis!

All, please see the revised notes attached from the conference call.

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From: Troche, Luis <Troche.Luis@epa.gov>
Sent: Tuesday, December 5, 2017 5:06:21 PM
To: Hyland, Patrick T.
Cc: Sallee, Lee A.; Moore, Berrien III; Roop, Kari D.; Pirtle, Keli P.; Emily Summars; Kloesel, Kevin A.; Fiebrich, Chris A.; Snow, John T.; Palmer, Robert D.; Droegemeier, Kelvin K.; Hong, Nadtya; Mc Pherson, Renee A.; Kuster, Emma L.
Subject: RE: Follow up to USEPA visit to the National Weather Center

Hi Patrick,

Thanks for the quick and comprehensive summary. I made a few edits and gave you a little additional information on the delegations. I look forward to getting the outline for what a program could look like at the WC.

Best Regards,

Luis Troche

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From: Hyland, Patrick T. [<mailto:pat.hyland@ou.edu>]
Sent: Tuesday, December 05, 2017 5:25 PM
To: Hyland, Patrick T. <pat.hyland@ou.edu>; Troche, Luis <Troche.Luis@epa.gov>
Cc: Sallee, Lee A. <lasallee@ou.edu>; Moore, Berrien III <berrien@ou.edu>; Roop, Kari D. <kroop@ou.edu>; Pirtle, Keli P. <keli.pirtle@noaa.gov>; Emily Summars <emily.summars@noaa.gov>; Kloesel, Kevin A. <longhorn@ou.edu>; Fiebrich, Chris A. <chris@mesonet.org>; Snow, John T. <jsnow@ou.edu>; Palmer, Robert D. <rpalmer@ou.edu>; Droegemeier, Kelvin K. <kkd@ou.edu>; Mc Pherson, Renee A. <renee@ou.edu>; Kuster, Emma L. <emmakuster@ou.edu>
Subject: Re: Follow up to USEPA visit to the National Weather Center

All,

Attached are notes from our conference call yesterday afternoon regarding the 2018 CEC Council Ministerial and delegation visit. For those that attended the call, if there are any additional details that you would like to add to the notes that I omitted, please let me know so I can make those changes.

We will make another attempt in early January 2018 to bring everyone together again to continue these discussions, but should anyone have any questions or comments between now and then, feel free to let us know!

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